

to improve. Therefore, if this operation is employed in patients with occlusive disease of the ipsilateral carotid artery, it is essential that carotid endarterectomy be done in conjunction with carotid-subclavian bypass grafting.

EDWARD A. STEMMER, MD

REFERENCES

- Cook CH, Stemmer EA, Connolly JE: Effect of peripheral resistance on carotid blood flow following carotid-subclavian bypass. *Arch Surg* 105:9-13, Jul 1972
- Golding A, Cannon JA: Application of electromagnetic blood flowmeter during arterial reconstruction. *Ann Surg* 164:662-677, Oct 1966

The Emergency Room Approach to Urethral Trauma

THE ASSOCIATION of traumatic fractures of the pelvis and lower urinary tract injuries has been well documented by numerous observers. The incidence varies from as low as 6 percent (Wakely) to as high as 25 percent (Vermooten). In evaluating the site of injury to the lower urinary tract, Clark showed that overall, 58 percent involved the urethra alone and another 9.4 percent were combined bladder and urethral injuries. These statistics should alert the emergency room physician to the high incidence of urethral injury associated with pelvic fractures.

Although death rarely results from urethral trauma, the sequelae frequently continue throughout the remainder of the patient's life. For this reason it is mandatory that the diagnosis be made in the emergency room if possible. In most instances, the emergency room physician has been conditioned to use a catheter in the severely injured patient in order to monitor his urinary output. In other cases, the physician may insert a catheter in an effort to diagnose the site of injury in the lower urinary tract. The disadvantages of this procedure are multiple. First, a partially ruptured urethra may be converted into a completely ruptured urethra. Second, a peri-vesical or peri-urethral hematoma is usually sterile but may be converted into an infected hematoma by the passage of a urethral catheter into it. Finally, the blind insertion of a catheter has the added serious risk of a false diagnosis. The catheter may be passed easily into the peri-vesical space or may curl up under the trigone giving the physician the impression that the catheter has passed through an intact urethra. This can lead to a delay of several hours

before a ruptured urethra is recognized. Therefore, the insertion of a catheter has serious disadvantages which can be completely circumvented by first studying a retrograde urethrogram.

The diagnostic signs of a ruptured urethra include blood at the external meatus, inability to void, a distended bladder and superior displacement of the prostate gland on rectal examination. These signs may not all be present, however, especially if the urethra is only partially torn. Therefore, it is recommended that a retrograde urethrogram be done in all patients with a traumatically fractured pelvis before the insertion of a catheter. Only in this way can inadvertent iatrogenic injury be avoided.

ROBERT KESSLER, MD

REFERENCES

- Mitchell JP: Injuries to the urethra. *Br J Urol* 40:649-670, Dec 1968
- Clark SS, Prudencio RF: Lower urinary tract injuries associated with pelvic fractures—Diagnosis and management. *Surg Clin North Am* 52:183-201, Feb 1972

Initial Treatment of Potential Peripheral Visceral or Vascular Injuries from Penetrating Trauma

PENETRATING WOUNDS which may produce a visceral or vascular injury can result from such causes as stabbing, gunshot or flying debris from an explosion. The wounding force or the depth of the wound is frequently difficult to establish from the history and physical findings. Surgical explorations of such wounds have been strongly recommended to detect and prevent complications from non-apparent visceral or vascular injuries. Prompt surgical treatment is obviously indicated in visceral injuries such as cervical tracheal or esophageal disruption, when subcutaneous emphysema is present or when deviation or displacement of these structures is noted. The same is true when a significant hematoma is present with or without expansion or there is loss of the peripheral pulse. By contrast, patients who sustain similar penetrating injuries can be safely observed if there is no clinical evidence of an associated visceral or vascular injury. If observation is instituted the patient must be followed for potential complications in an identical manner to patients in whom surgical exploration was employed. No significant morbidity has been noted when appropriate observation was employed with no clinical evidence of a

significant visceral or vascular injury. Furthermore, the rate of morbidity appears to be significantly greater in patients whose wounds were explored by surgical procedures and no significant injury was found than when similar patients were simply observed.

LINDSAY C. GETZEN, MD

REFERENCES

- Getzen LC, Bellinger SB, Kendall LW: Should all neck, axillary, groin, or popliteal wounds be explored for possible vascular or visceral injuries? *Trauma* 12:906-913, Oct 1972
- Mufti MA, LaGuerra JN, Pochaczewsky R: Diagnostic value of hematoma in penetrating arterial wounds of the extremities. *Arch Surg* 101:562-569, Nov 1970

greater density per unit area than in normal skin and the increased frequency of malignancy is because of an increased number of melanocytes.

ERNEST N. KAPLAN, MD

REFERENCES

- Reed WB, Becker SW, Nickel WR: Giant pigmented nevi, melanoma, and leptomeningeal melanocytosis. *Arch Dermatol* 91: 100-119, Feb 1965
- Greeley PW, Middleton AG, Curtin JW: Incidence of malignancy in giant pigmented nevi. *Plast Reconstr Surg* 36:26, Jul 1965
- Kaplan EN: The risk of malignancy in large congenital nevi. *Plast Reconstr Surg* 53:421, Apr 1974

Malignant Potential of Large Congenital Nevi

THERE IS CLEAR DOCUMENTATION that large congenital nevi (giant pigmented nevus, melanocytic nevus) have a very high risk of becoming melanoma. The incidence of melanoma in congenital large nevi has been reported to be between 2 and 42 percent. The average incidence reported in the literature and in the experience at Stanford Hospital suggest that the incidence projected throughout a normal lifespan is between 10 and 20 percent. Therefore, we recommend that congenital melanocytic nevi be surgically excised and reconstructed by appropriate methods. The risk of developing a melanoma is present at all ages, although 70 percent of melanomas occur before puberty. Furthermore, there appears to be a close relationship between the histologic type of the giant nevus and the risk of malignancy. Giant nevi with a histologic pattern of a junctional nevus, neural nevus or blue nevus seem to have a high risk whereas a histologic pattern of an intradermal nevus has a lower risk. Therefore, screening biopsy specimens of the nevus may be helpful in determining the need for, and timing of, surgical excision.

The reason for the high malignant potential is not known, but is probably due to one of two factors. First, the nevus is a hamartoma comprised of melanocyte-like cells derived from the neural crest. It can be postulated that whatever teratogen caused the hamartoma has altered the genetic potential within the cell or is in itself also a carcinogen and, therefore, the individual cells are more susceptible to malignant change. The alternative explanation is that a congenital nevus is a site where there are normal melanocytes in a

Coronary Artery Disease

NUMEROUS SURGICAL TECHNIQUES have been used over the years for the treatment of coronary artery disease. These include epicardial abrasion to ligation of the coronary sinus, placement of talc within the pericardial cavity and intramyocardial implantation of the internal mammary artery. None of them have shown any great measure of success in regard to the criteria by which any operation for coronary atherosclerosis must be judged, namely relief of angina, prevention of myocardial infarction and prolongation of life.

In the early 1960's, Sones at the Cleveland Clinic developed the technique of coronary arteriography, by which the exact location of coronary artery narrowings could be ascertained. This led Favoloro, also at Cleveland, to work out a method for direct revascularization of the heart using saphenous vein grafts to bypass these arteriographically demonstrated lesions. Since its introduction in 1967, numerous modifications and refinements of the surgical technique of aortocoronary bypass grafting have been made so that at the present time late graft patency rates ranging between 80 percent and 95 percent have been reported. Further, surgical mortality rates have been reported as low as 0.8 percent in elective cases. The clinical results of aortocoronary bypass operation, in contrast to those of previous operations for coronary atherosclerosis, have been quite good, especially in the relief of angina. In one series of patients, there was complete relief of pain in 80 percent and improvement in an additional 8 percent. Other series of patients have been reported with quite similar results. Data supporting the contention that aortocoronary bypass grafting improves longevity are not complete but suggest that the operation is effective in that re-